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An Inaugural Dissertation On Hæmoptysis

BY

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When we contemplate the delicate structure and nicely balanced arrangement of the Pulmonary organs, it cannot be a matter of surprise that they should so often become the subject of disease.—

These organs, which are situated in the cavity of the Thorax, have their blood vessels more numerous than those of any other part of the body of the same capacity. These vessels which are subdivided into trunks of the smallest size, and are spread out near the internal surfaces of the Bronchial cavities, are situated in a loose cellular texture, and covered by a delicate membrane only, so that, considering how readily and frequently these vessels are distended with blood, we may readily infer, why an Hæmorrhage from the Lungs is next in frequency to that of the nose.—

Hæmoptysis as it is defined by Systematical Writers, is a spitting of blood. It is arranged by

Cullen in the class Pyrexiæ and order Homorrhagiæ. Hemoptysis most frequently occurs from the age of sixteen to that of thirty five. The reason assigned by Authors, why Homorrhage occurs at this particular stage of life, is that when the several parts of the system have attained their full growth, there is an equilibrium existing between the systems of the Aorta, and Pulmonary artery, or between the vessels of the Lungs, and those of the rest of the system, consequently, whatever has a tendency to destroy this nicety of balance will be the cause of Homorrhage from the Lungs. Cullen says that although the vessels of the Lungs are small in proportion to their office, yet they are commonly compensated by the greater velocity of the blood in them, yet if this velocity be not always adjusted to the established compensation, it is probable that a plethoric state of the whole system, will, ~~and~~ always

be especially felt in the Lungs.

According to Bichat and other anatomists, we have no facts or experiments, tending to illustrate that the blood circulates with greater velocity, through the Pulmonary organs, than in the other parts of the system. The blood in Hemoptysis may issue either from the Lungs, Trachea, or Fauces. in the last it is merely brought up by ~~coughing~~ coughing, without pain, cough, oppression, or febrile exascerbations; and sometimes we can on examination readily distinguish the source from which it proceeds. It is said that the blood discharged by the fauces, is rarely or never of so florida colour as that issuing immediately from the ~~Lungs~~ That which takes place from the Trachea is sometimes of very serious importance, and demands particular attention. It is said in some instances to be the precursor of Phthisis Pulmo-

-nalis. Dr Chapman says that he has seen cases of this kind where Catarrh terminated thus in Phthisis Pulmonalis.

Symptoms

Hemorrhage from the Lungs is characterised by coughing up florid, or frothy blood: preceded usually by heat or pain in the chest, irritation about the Larynx, and a saltish taste in the mouth, pulse frequent, full, and with a particular kind of vibration, even when soft and weak as it frequently is after a day or two. Of all these Symptoms the spitting of blood is the most constant and severe, this is commonly very copious returning by fits, with cough oppression, anxiety intense redness or extreme paleness of the face and coldness of the extremities. By attend to these circumstances it can readily be distinguished from Hematemesis, as in the latter the blood is thrown out in considerable quantities

is of a darker colour, more grumous, and mixed with the other contents of the stomach. The blood which proceeds from the Lungs is for the most part arterial, that in Hæmatemesis venous. The milder cases of Hæmoptysis are now very generally considered as depending on some functional derangement of the bronchial membrane, which causes it to exhale blood in place of its ordinary mucous secretion.

Causes

Hæmoptysis is frequently produced by a predisposition from conformation, indicated by prominent shoulders, and narrow chest, delicate make, and sanguine temperament, ~~and~~ is excited by loud and long speaking or singing, violent exertions, such as jumping, wrestling, Catarrh, cough &c. Likewise happens to persons, who have been formerly subject to repeated Hæmorrhages from the nose. It is also

said that Hemoptysis is excited by a sudden diminution of the weight of the atmosphere, and ascending the summits of very lofty mountains, where the state of the atmosphere is very much rarefied, combined perhaps with the exertions made in ascending, is frequently an exciting cause of Hemorrhage from the Lungs. It is also brought on by sudden vicissitudes in the weather, and generally makes its appearance in the Spring and beginning of Summer. It occurs in a great majority of cases, at night when there is least corporeal action, whether this is owing to a predisposition occasioned by the state of sleep or not, Dr Chapman says is uncertain.

There are several species of this disease, which take place in different ways

1st From accidental rupture of a blood

vessel, as by a fall or wound. 2nd From excessive inflammation as in Pleurisy, Pneumonia &c. 3rd From the suppression of some accustomed evacuation as the menses, Hemorrhoids &c. 4th From inordinate fullness of the vessels. 5th From an abscess in the Lungs. 6th From tubercles which is almost always fatal terminating in Phthisis Pulmonalis. —

Remedies

The first object in the cure of all diseases is to remove the remote causes so far as they still continue to operate. —

Hemoptysis is divided by Cullen and other authors, into Active and Passive, and I shall speak first of the Active form. When it is connected with too high arterial action it is generally accompanied with a sense of weight and oppression in the Breast, a short and dry cough, difficulty of respiration, with a full hard

pulse and chills succeeded by heat, cold extremities, lapitude &c. The chief indication here, is the reduction of Arterial action and the most prompt and effectual means of fulling this indication is venesection, which should be carried so far as to make a decided impression on the pulse. Dr. Hebenden is opposed to Veno section. "How says he can the opening of one vessel, stop the flow from another vessel already opened?" But long experience has established the utility of venesection in this stage of the disease. After Arterial action is sufficiently reduced or while the abstraction of blood is going on direct the use of common salt, in substance, in the dose of a tea or table spoon full every ten, fifteen or twenty minutes to be dissolved slowly in the mouth, as it produces less nausea when taken

in this way. The modus operandi of this medicine is not very intelligible, but the generally received opinion is that it operates as an Astringent. The patient should be placed in a well ventilated apartment, his shoulders elevated, and absolute rest enjoined on him, all company should be excluded, and he should not be allowed to talk. His diet should be very abstemious, consisting of light soups and acidulated drinks such as Lemonade &c, his bowels should be kept in a solvable state, though no great advantage is derived from active purging. Cooperating with the same end direct the use of cold applications to the chest, and particularly to the axillæ, as there is no part of the body more susceptible of the impression of these applications.

In cases of great emergency it was highly

recommended by Dr Bond to envelope the whole body in a sheet wet with cold water or vinegar; the effusion of cold water on the body, or its immersion in the water has been also resorted to in desperate cases, but these applications should not be used where there is a predisposition to pectoral complaints. Cold applications to the scrotum have also been strongly recommended, -
Should all the means above mentioned prove unsuccessful, the next remedy, which presents itself is Sacch: Saturni: it has long ago been used in this disease, and was thought particularly adapted to Uterine Hemorrhage. It was considered by Heberden as a specific in Hemorrhage from the Uterus, but was suffered to remain dormant for a long time from an apprehension of its deleterious effects. To Dr Barton

we are indebted for its introduction into this country. One precaution however is necessary in the administration of this medicine, when there is a plethoric state of the system, that it should always be preceded by copious venesection, otherwise it would prove mischevious; the common is from ij to iij grs. combined with 1/2 gr of Opium to be given every half hour. pro re nata. In larger doses Dr Chapman thinks that it would be more efficacious: he says that he has known as much as ℥ij to be taken without any other bad effects than active purging and some griping. —
Next to Sacch: Saturni: Digitalis seems to have claimed the pre-eminence. It has even been proposed by Cullen and others as a substitute for the Lancet, but we should never use it in preference to the Lancet in active

Hæmoptysis. He who resorts to it as a substitute for venæsection, will not only sacrifice his own reputation, but will endanger the life of his patient. There is no article comprehended in the whole Materia Medica which should supersede the use of venesection in Hæmoptysis connected with high arterial action. At one time Digitalis was considered by Mapsman as possessing powers approximating to a specific in Hæmorrhage. It has been recommended by some as useful after a considerable loss of blood, when the pulse becomes soft, the skin cool, and many of the indications of Inflammatory Diathesis have disappeared, when under these circumstances it would be unsafe to resort to direct depletion: even here it has been doubted, whether it is equal to the preparations of Lead, Ipicacuanha or Squill.

If Digitalis is ever useful in this disease, it is, when this affection is connected with the incipient stage of Phthesis Pulmonalis, accompanied with a small quick, irritated pulse, short impeded respiration, and a hard dry diminutive cough.

Alum was at one time in considerable repute, but is now only resorted to after the bleeding has stopped to prevent its recurrence. Emetics were strenously recommended by Dr Robinson, they are generally considered by most practitioners as hazardous, where the Homorrhage is copious in consequence of the rupture of a bloodvessel, and should never be used except under extreme circumstances, and where milder remedies had proved unsuccessfull. They are said to be advantageously prescribed in Homoptysis connected with a tuberculous state of the Lungs, where the Homorrhage is

slight and mixed with mucus, given under these circumstances they determine to the surface, quiet the cough, lessen the difficulty of respiration, promote expectoration, and equilize excitement. Emetics are in very common use in nauseating doses, of which Ipecac is entitled to the preference. Dr Chapman speaks of it in the highest terms, it should be given in the dose of j or ij grs combined with ¼ gr of Opium at the interval of every hour or two.—

Refrigerants, all of the neutral salts are of this description, but Nitre from its extensive use justly merits the preference; as an ancillary to the Lancet, much may be expected from it, and its virtues are considerably enhanced by combining it with the Antimonials. Dr Buccavi: says after various other remedies had proved unsuccessfull in Hemorrhage he had recourse to the Nitrat. of Potash

and asserts that it had been followed by continued success, after a small bleeding which he says was not always necessary, he mixed nitre in the quantity of from iv to vj drachms in an ounce of Gum water, two or three table spoonsfull of which were taken every hour. —

A case of violent Hemoptysis came under my observation last summer, in which an ounce or more of the Nitrat. of Potash was taken at once, without any other inconvenience than active vomiting and copious purging. The subject of this disease was a young man of Sthenic habit and predisposed to the disease from conformation, having received a severe blow upon his chest by a fall a violent Hemorrhage almost immediately issued from his Lungs: being present at the time the accident occurred X

I bled him copiously and directed the use of common salt, and cold applications to be applied to the chest and a pillow, in a short time the Hemorrhage ceased, but there still remained a little excitement in the system and a tendency of the Hemorrhage to return, the nitre combined with a small portion of Tart: Emetic: was prescribed to prevent its recurrence, however in a very short time a most appalling discharge of blood burst forth again, his mother who was present being very much alarmed, ran to a table on which there was a paper containing an ounce or more of the Nitrat: of Potash: dissolved it in a glass of water and gave him the whole at once, being unconscious of the deleterious effects of the medicine, his stomach being very irritable, vomiting was immediately excited and the Hemorrhage

completely arrested.—

Mineral Acids. These are more astringent than the Neutral salts, and may be used in the commencement of the disease, however they should not be used in preference to remedies of more decided efficacy, which have been spoken of above. The Sulphuric Acid, is the best and the dose 15 or 20 drops every two or three hours the Ether: Nitrat: answers very well.

Local: Applications. Cold has been already mentioned, the Vesicating applications are of decided utility in this disease, and particularly where it assumes a chronic form, much has been said of the proper place for their application, but the majority of Physicians is of the decided opinion that they ought to be put immediately on the chest. as the efficacy of such applications is in

proportion to their proximity, to the part affected; but where revulsion is wished to be effected, or the concatenation of morbid action to be broken up, they should be applied to the extremeties.—

Passive Hemorrhagy or Hemorrhage of feeble action. The first object here laying aside all depletory measures, is to employ such as possess the power of imparting tone to the system and the remedies which we should employ to fulfil this indication, are Tonics.—

The Peruvian Bark sustains the highest reputation. Dr Rush spoke with a degree of enthusiasm of it. It is commonly prescribed alone, but it is best combined with chalybeates, as the muriates and sulphate of Iron. The vegetable astringents have been used, such as kino, catechu, &c but they have nearly fallen into disuse

in Hemoptysis, but are, useful in other Hemorrhages.

Most utility it is said is derived from the mineral acids, the Sulphuric is best, but where this disease is connected with a scrofulous Diathesis, the Nitric acid is to be preferred. These remedies may be aided by exercise, an invigorating Diet and proper Drink. Moderate exercise on horse back is the mode in which it is generally preferred, it should be taken in fair weather, and the patient not to fatigue himself. His diet should be light and nutritious. Porter is the best drink, it imparts tone and astringency to the bleeding vessels.

When Hemoptysis is connected with constitutional peculiarities, it leaves behind it a very great tendency to recurrence. Under

these circumstances, the patient should be put under a strict prophylactic plan, he should avoid every cause which has a tendency to increase the impetus of the circulation, such as undue exercise and improper diet, he should observe the greatest caution in exposing himself to cold, as nothing tends more to reproduce it than Catarrh. When a predisposition to phthisis exists, particular attention to the state of the pulse and chest should be observed; should excitement in the circulation, and pain in the chest supervene, small bleedings, rest low diet, nitre, and the whole of the Antiphlogistic plan should be immediately resorted to. When the local affections are urgent much good has been derived from perpetual Blisters to the chest. When the disease is very obstinate a Mercurial course has been recommended, It is said however

that cases will sometimes occur which will resist all our medicines, here as a dernier resort advise the patient to remove to a warmer climate and by a sea Voyage —